

Viscosity Lab

Name _____

Viscosity is defined as a liquid's resistance to flow.

Name a substance that has HIGH viscosity _____

Name a substance that has LOW viscosity _____

Different liquids have different viscosities due to their chemical makeup.

Other factors can affect the viscosity of certain liquids. Today we are going to compare the viscosity of water and corn syrup. We will then look at the effect of temperature on the viscosity of the corn syrup.

Problem:

How will temperature affect the viscosity of corn syrup?

Hypothesis:

Materials:

Measuring cup, paper cup, nail, newspaper, watch or clock with a second hand, bucket-o-soapy water

Procedure:

Corn syrup is EXTREMELY sticky and messy. Please do not make me regret letting you do this lab activity!!!! Spread a layer of newspaper on your desk before you begin and please clean up any and all mess when you are finished.

1. Begin with water...measure out $\frac{1}{4}$ cup of water in your plastic measuring cup.
2. Use the nail provided to poke a hole in the bottom of your paper cup.
3. Place your finger tightly over the hole and pour the water into the paper cup.
4. Hold the cup OVER the empty measuring cup and get ready to time.
5. Remove your finger and time how long it takes for all the water to drain from the paper cup into the plastic measuring cup.
6. Record your time on the data table and repeat.
7. Average your times for accuracy and record the average on the data table.
8. Dry both cups and repeat steps 1-7 with corn syrup. For trial #2 you will probably have to add a little more corn syrup to make up for the syrup sticking to the bottom/side of your paper cup.
9. Make sure you have $\frac{1}{4}$ cup of corn syrup in your measuring cup and bring it up to the microwave to be heated.
10. Repeat steps 1-7 with your warm syrup and record on the data table.
11. Using the graph paper provided, make a BAR graph showing the results of your experiment. Be sure to use your AVERAGED data when making your graph. Don't forget to label both the X and Y axis and to give your graph a title. See graphing instructions on back.

12. Answer the questions.

Data:

Water and Corn Syrup Viscosity Data

	Time (sec) Trial #1	Time (sec) Trial #2	Average time (sec)
water			
room temp corn syrup			
warm corn syrup			

Questions:

1. Which has a higher viscosity, water or corn syrup?
1. What effect did heating have on the viscosity of corn syrup?
1. What are the two factors that affected viscosity in today's lab?
1. What are the two factors that specifically affect the viscosity of magma in a volcano?

Be sure to check your graph carefully for the following items that you will need to have in order to receive full credit:

- Bar graph done in PENCIL with the aid of a ruler
- Title
- X and Y labeled FULLY (be sure to include any units of measurement)
- Different color for the three bars you are drawing as well as a key to tell the reader which color represents which liquid